



CONSERVATION PRACTICE SPECIFICATIONS GUIDE

For:

Fishpond Management (No.) Code 399

A. Pond Size, Depth, and Water Quality

1. For fishpond design criteria, refer to the standards and specifications for pond-378.
2. Water Quality

- a. Fishponds will not be located below feedlots or areas where land treatment does not restrict the movement of pesticides and fertilizers or sediment into the pond. A strip not less than 20 feet wide encircling the pond will be maintained in a permanent vegetative cover. A controlled access point for livestock watering is allowable providing efforts are taken to reduce water turbidity (e.g., sand or graveled shore area).
- b. Fishponds with visibility into the water less than 4 inches because of suspended sediment are not recommended for stocking. Ponds with visibility into the water from 4 to 10 inches because of suspended sediment are recommended for stocking with channel

catfish only. Ponds with visibility into the water over 10 inches are suitable for stocking with trout, bass, bluegill, or channel catfish. Minor discoloration is allowable for short periods (5-10 days) after pond has been filled.

- c. Locate and treat sources of silt. A large population of undesirable fish, such as suckers or carp, will cause turbid water.

Fishpond Management

- d. Agriculture gypsum scattered evenly over pond at a rate of 525 pounds per acre-foot is generally sufficient to clear muddy water. If water doesn't clear in 6 weeks, apply an additional 130 pounds of gypsum per acre-foot. Once pond is clear, one or two bags of agricultural gypsum may need to be added annually for maintenance.
- e. The fishpond is considered to be cold water if the water temperature one foot under the surface doesn't exceed 75 degrees F. for

- more than 2 weeks during the summer.
- f. The fishpond is considered to be warm water if the water temperature one foot under the surface in some part of the pond reaches 75 degrees F. and remains at this temperature or higher for a minimum of two weeks during the summer.

g. Marginal Water Ponds

1. Where surface water temperature remains between 70 and 75 degree Fahrenheit and dissolved oxygen content of water at depths below 3 feet is at or above 5ppm (with cool night time air temperature or some cold water entering the pond) the pond may be suitable for trout. Such waters are also suited for bass, pike, catfish. And other warm water fishes; however, growth of these species is slow.
2. Where surface water temperature exceeds 65 degrees Fahrenheit and/or the dissolved oxygen content below 3 feet is less than 5 ppm, the pond is marginal for trout, but may be

suitable for bass, pike, catfish or other warm water species.

h. pH

The pH values of most inland waters containing fish range between 6.7 and 8.6. Fish can live in a wide pH range. The permissible range of pH for fish depends upon many other factors such as temperature, dissolved oxygen, and prior acclimation. If before daybreak pH is outside the range of 6.7-8.6, seek professional fishery biology assistance before planning fish stocking.

B. Fishpond Stocking

1. General- All fishponds

- a. Wyoming regulation- It is illegal to import or release any live fish or fish eggs in waters of the State without authorization of the Wyoming Game and Fish Department. Persons who plan to stock ponds with fish should be advised to write to the Director, Wyoming Game and Fish Department, State of Wyoming, Cheyenne, Wyoming 82202,

giving the name and location of waters to be planted, number and kind of fish to be planted, and where fish will be obtained.

Fishpond Management

- b. Ponds with more than 20 percent of surface area covered with aquatic weeds should not be stocked. See section on Aquatic Weed Control.
- c. Ponds should be free of fish at time of stocking, except for kinds being stocked. See section on Fish Toxicants.
- d. Surface acreage for computing numbers of fish to stock will be figured at the lowest expected water level of the pond or reservoir.

2. Cold Water Ponds

- a. Rainbow, brook, or cutthroat trout will be stocked. Rainbow trout perform most satisfactorily in ponds and provide the highest yields in pounds of fish per surface acre.
- b. Stock at a rate of 300 to 500 two to four inch

fingerlings per surface acre the larger number to be stocked in highly fertile ponds. Higher stocking rates are permissible if artificial feeding is planned. Refer to Table 1 for alternative stocking rates and management suggestions. Natural mortalities of 10-20 percent may occur with fingerlings during the first year. See table 1

- c. It is necessary to restock a pond at least every third year. Trout rarely reproduce in ponds and don't survive much beyond three years after being planted. Restock in late summer or fall after most large trout have been fished out. To avoid cannibalism, remove any large trout remaining in the pond.

3. Warm Water Ponds

- a. Bluegill should be stocked in the fall at the rate of 50 fingerlings per surface acre. When channel catfish are initially

stocked in combination with largemouth bass and bluegill, it is recommended that fingerlings be stocked in the fall of the first year at a rate of 100 per surface acre. If channel catfish only are stocked, stocking time depending on availability, the stocking rate should be 200 to 300 fish per surface acre. Supplemental stocking of channel catfish should be with four to six inch size fish.

capacity of the pond.

2. Bass-Bluegill
 - a. Delay fishing until bass have spawned, normally the second or third spring after stocking.
 - b. Harvest about 4 to 8 pounds of bluegills for each pound of bass (10 to 20 bluegills for every bass) to help maintain proper balance.
 - c. Keep all bluegills caught.
 - d. Encourage year-round use to include ice fishing.

C. Fish Harvesting

1. Trout
 - a. Commence fishing as soon as the trout are six to eight inches long to get the greatest returns in numbers and pounds of eating-size trout.

3. Catfish

- a. Seining, draining, drawdown, and fishing are methods of harvest.
- b. Harvested as desired. The catfish are not competitive with bass and bluegills for food. Catfish may be included to spawn by putting cream cans or sections of culvert in the pond with one end blocked in the eater 3 to 6 feet deep.

Fishpond Management

- b. Make efforts to remove the large fish. After three years there will be a few large fish. Their total weight will be far below the carrying

D. Aquatic Weed control

Applicable on ponds, reservoirs, and lakes, where aquatic plant growth interferes with fishery production and utilization.

1. Prevention- Prevention Control of aquatic weeds, other than algae, begins with construction of all areas within the pond to a minimum of three feet deep. This practice eliminates the favorable conditions for growth of aquatic vegetation.
2. Control- Aquatic weed control may be accomplished through biological, mechanical, and chemical methods, or a combination of these.

a. Biological Control

1. Floating Waterweeds

Duck weed can be controlled by using six to eight domestic bucks per surface acre of pond. It can likewise be controlled by clearing vegetation around pond edges to allow increased wind action; removing logs, brush, and debris from the water, and eliminating submersed weeds.

2. Submersed Waterweeds (pondweeds, coontail, watermilfoil, chara, Etc.)

Pond fertilization is used to create a microscopic phytoplankton (plant) bloom which prevents rooted submersed aquatic plants from establishing.

b. Mechanical Control

1. Emergent vegetation may be cut by hand or pulled before infestation becomes too heavy. It may be cut with a mechanical mower mounted on a boat. These methods, at best, offer only temporary control.
2. By temporarily lowering water levels in the fall, exposure to desicating wind and cold will reduce aquatics for one or two years. The process may have to be repeated annually.
3. Dredging or otherwise deepening shorelines to a minimum 3:1 slope.
4. Emergent vegetation may be controlled or reduced by deepening pond margins to a minimum depth of three feet.
5. Most submersed and emergent aquatic weeds can be controlled through partial or complete draining of a pond where feasible. Ponds treated in this manner should be dewatered for a period of 15 to 30 days (preferably during the winter). The longer interval giving the most satisfactory results.
6. Removal of dead and dying vegetation (including filamentous algae) from a pond as soon as possible helps to avoid oxygen depletion and formation of hydrogen sulfide, a toxic gas.
7. Prevent grass clippings from entering the pond during grounds maintenance activities. This encourages filamentous algae.

c. Chemical Control 1/

1. Chemical herbicides to reduce aquatic weed problems serve as temporary controls and repetitions of treatment will probably be required annually or more often in some cases. Refer to the most recent Wyoming Weed Control Guide, Agricultural Extension Service, University of Wyoming, for information about specific aquatic herbicides.

1/ Caution: Users of herbicides should be cautioned that improper use, careless disposal of containers and unused portions can lead to poisoning of humans, domestic animals, desirable plants, pollinating insects, fish, and wildlife; and to contamination of water supplies. Herbicides used in presence of fish being used for human consumption MUST be cleared by responsible U.S. Government Agencies, including F.D.A.

E. Winterkill and Summerkill Prevention

Both winterkill and summerkill are most generally caused by oxygen depletion. In winter, ice and snow cover reduces or stops photosynthesis; this, along with oxygen demands by fish respiration and decaying vegetation and a resulting buildup of hydrogen sulfide, depletes the oxygen supply in ponds and creates an environment unfavorable for fish. In summer, ponds that are heavily infested with aquatic vegetation and/ or a heavy load of decaying organic matter (plants, fish food, fish body wastes, etc.) are prone to summerkill due to oxygen depletion when skies are cloudy (preventing photosynthesis), winds calm, and temperatures high.

1. Winterkill Prevention
 - a. Where ice and snow cover ponds, remove snow cover to increase photosynthesis, if it can be accomplished safely.
 - b. Aeration with mechanical aerators.
 - c. Bottom water overflows can be used to remove toxic gases and oxygen depleted waters from ponds. When pond is equipped with a gated drain, open slightly to remove toxic waters.
 - d. Control aquatic vegetation which utilizes dissolved oxygen through its decay.

2. Summerkill Prevention

- a. Control aquatic waterweeds.
- b. Insure that ponds are properly stocked. Overstocking of fish increases oxygen demand and “sets the stage” for both summer and winter fish kills.
- c. Aeration with mechanical aerators.
- d. Temporary relief may be obtained by broadcasting

50 to 100 pounds of superphosphate fertilizer per surface acre to waters where fish are showing signs of stress due to lack of sufficient oxygen. Small amounts applied frequently are most effective than a single large application. Apply superphosphate by distributing well over the surface of the pond.

F. Fish Diseases and Parasites

1. Identification of fish diseases, parasites, fungi, and treatment recommendations should be made by a fish pathologist or qualified biologist.

G. Fish Feeding

1. Artificial feeding of fish is commonly practiced in commercial or private ponds to increase production. Excellent feeds are on the market under a variety of trade names. Pond owners using commercial feeds should follow manufacturer's recommendations.

H. Fish Toxicants

1. Applicable where unwanted fish are to be removed from ponds prior to restocking with

desirable fish. The Wyoming Game and Fish Department is to be consulted prior to any treatment of waters with fish toxicants.

I. Planning Considerations

1. The land adjacent to the pond can be developed into a desirable wildlife/recreation area by proper seeding of adapted grasses or the planting of suitable trees and shrubs. Consult Section IV of the Technical Guide, Standards and Specifications for Wildlife Wetland Habitat Management, Wildlife Upland Habitat Management, Critical Area Planting, Tree Planting, and Farmstead and Feedlot Windbreaks.

See NRCS Biology Technical Note 32-Fish Facts.

Specifications for established and operation of this practice shall be prepared for each field or treatment unit according to the Criteria, Considerations, and O & M described in this standard.

Specifications shall be recorded using approved certification sheets, job sheets, narrative statements in the conservation plan, or other acceptable methods.

Additional Documentation Required:

1. Location- Field Numbers and Map.
2. Surface acres and acre-feet of water, maximum depth.
3. Fish species benefiting.
4. Chemical analysis results of water.

5. Weed control plan.
 6. Source and condition of fish stack.
 7. Date and signature.
 8. Date practice applied.
- WY-ECS-41 and 42 are applicable to this practice.